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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,152	03/31/2004	Karl Brown	008325	9014
61285 7590 03/10/2009 JANAH & ASSOCIATES, P.C. 650 DELANCEY STREET, SUITE 106 SAN FRANCISCO, CA 94107			USA/AGS/SPARES/HMM	
			EXAMINER	
			THOMAS, LUCY M	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,152	Applicant(s) BROWN ET AL.	
	Examiner Lucy Thomas	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 6, 8-10, 13-14, 11-12, 20-21, and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12, 16-18, and 20 of U.S. Patent No. 7 480 129. Although the conflicting claims are not identical, they are not patentably distinct from each other. Claim 1 of the instant application and 12 of co-pending application recite an electrostatic support or pedestal, and electrostatic chuck comprising dielectric/ceramic body or covering with embedded electrode, and having a surface to receive or support a substrate, a base plate comprising a composite of porous ceramic infiltrated with metal, and annular flange, extending beyond the periphery of the dielectric.

Claims 6, 8-10, 13-14 and 11-12, 20-21, and 17 of instant application and Claims 16-18, and 20 of the co-pending applications further limits the electrostatic chuck of Claim 1 with spring loaded heat transfer plate, and a pedestal having peripheral edges, and spiral fluid channels.

Claim Objections

3. Claims 15 and 21 are objected to because of the following informalities:
Recitation of "the bond layer comprises an aluminum bond layer between" renders the claims indefinite, as it is unclear between what elements the bond layer is placed. For examination purposes, "bond layer comprises an aluminum bond layer" is considered. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim Rejections - 35 USC § 103

5. Claims 1, 4-5, -10, 14-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6,538,872) in view of Edelstein et al. (US 5, 796, 074). Regarding Claim 1, Wang discloses an electrostatic chuck 55 capable of attachment to a pedestal in a process chamber (see Figures 1-7), the chuck comprising:

(a) an electrostatic puck 100 comprising a ceramic body with an embedded electrode 105, the ceramic body having a substrate support surface 120 with an annular periphery; and

(b) a base plate 175 bonded to the electrostatic puck by a bond layer 250, the base plate having an annular flange extending beyond the periphery of the ceramic body (see flange of 175 extending beyond 100 in Figure 1), wherein the base plate comprises a composite of a porous ceramic infiltrated with metal (see Abstract, Column 5, lines 32-33, Column 7, lines 10-24). Wang also discloses a plurality of holes 315 (see Figure 6) to allow connectors 320 (see Figure 6) to pass, but differs as to the location and type of the plurality of holes (holes 31 are on a support pedestal, not on the base plate, located such that connection can be made to the chamber).

Edelstein discloses detachable electrostatic chuck (Figures 2-4) comprising an electrostatic puck 76 comprising ceramic body with an embedded electrode, the ceramic body having substrate support surface with an annular periphery, and a base plate 38 bonded to the electrostatic puck by a bond layer 90 having an annular flange extending beyond the periphery of the ceramic body 42 having plurality of holes to allow connectors 48 to pass therethrough. It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the electrostatic chuck of Wang and to provide plurality of the holes on the base plate as taught by Edelstein, to make the chuck separable from the support/pedestal and to facilitate easy user access for detachment and attachment (see Edelstein, Column 3, lines 59-61, Column 2, lines 47-

50), and to meet other design requirements such as cost, space, maintenance time of the system.

Regarding Claim 4, Wang discloses that the ceramic material comprises silicon carbide and the metal comprises aluminum (see Column 6, lines 2-5).

Regarding Claim 5, Wang discloses the volume percentage of aluminum in the composite is from about 20% to about 80% (see Column 6, lines 2-5).

Claim 6 basically recites the elements of Claim 1, and additionally a support pedestal having a housing and annular ledge, the annular ledge extending outwardly from the housing, wherein the annular ledge is capable of being attached to the annular flange of the base plate by the connectors. Wang discloses a support pedestal 190 and Edelstein discloses a support pedestal 32 having a housing and annular ledge, the annular ledge extending outwardly from the housing (, wherein the annular ledge is capable of being attached to the annular flange of the base plate by the connectors.

Regarding Claim 7, Wang discloses that the ceramic material comprises silicon carbide and the metal comprises aluminum (see Column 6, lines 2-5).

Regarding Claim 8, Edelstein discloses a heat transfer plate (see elements 62, 60, 61 of heater assembly 30) below the base plate, the heat transfer plate having a heat transfer fluid channel (see 66, 68 and channels between 60 in Figure 2) embedded therein.

Regarding Claims 9-10, Edelstein discloses that the heat transfer plate comprises an upper portion comprising a first material made of copper and a lower portion comprising a second material made of steel, and the heat transfer fluid channel

being embedded therebetween (62 is made of copper and 61 is made of steel, see Column 5, lines 35-40).

Regarding Claim 14, Edelstein discloses a thermally conductive layer 56 between the heat transfer plate and base plate.

Regarding Claim 15, Edelstein discloses that the bond layer comprises an aluminum bond layer (see Column 6, lines 13-17).

Regarding Claim 16, Wang discloses a substrate processing chamber 25 comprising the electrostatic chuck and further comprising a gas supply 70 to provide a process gas in the chamber, a gas energizer 95 to energize the gas, and an exhaust 75 to exhaust the gas.

Regarding Claim 18, Wang discloses the volume percentage of aluminum in the composite is from about 20% to about 80% (see Column 6, lines 2-5).

6. Claims 11-12, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6,538,872) in view of Edelstein et al. (US 5, 796, 074) and Cole et al. (US 6,700, 099). Claim 11 recites the combined limitations of Claims 6 and 8, and further limiting the heat transfer fluid channel comprising first and second spiral channels, the first spiral channel being adapted to provide a flow of fluid therethrough that is substantially opposite a flow of fluid through the second spiral channel. Wang and Edelstein do not disclose the spiral heat transfer channels. Cole discloses an electrostatic chuck having heat transfer fluid channels comprising spiral channels, the first spiral channel being adapted to provide a flow of fluid therethrough that is substantially opposite a flow of fluid through the second spiral channel (see

Figure 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Wang and Edelstein, and to provide spiral channels as taught by Cole to provide efficient and uniform heat transfer to ensure highly accurate and uniform temperature setting and wafer testing (see Cole, Column 5, lines 50-55).

Regarding Claim 12, Cole discloses the first and second spiral channels encircle a center of the plate 10, 3 times. Claims 20-21 basically recites the elements of Claims 14-15, except that the electrostatic chuck of Claim 11 is recited. Therefore, please see the rejections for Claims 14-15 above. 7.

7. Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6,538,872) in view of Edelstein et al. (US 5, 796, 074) and Flanigan et al. (US 6,081,414). Regarding Claim 13, Wang and Edelstein do not disclose a spring assembly to apply pressure to the heat transfer plate. Flanigan a spring assembly 234 (see Figure 2, Column 2, lines 52-62) to apply pressure to a heat transfer plate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Wang and Edelstein, and to provide a spring assembly as taught by Flanigan for better heat transfer.

Claim 17 basically recites the combined limitations of Claims 6, 8, and 13, except that the plurality of holes of the annular flange is not recited. Therefore, please see the rejections for Claims 6, 8, and 13 recited above.

Response to Arguments

8. Applicant's arguments filed on 8/25/2008 have been fully considered.

Applicant's arguments toward Wang reference, most of the arguments, are rendered moot in view of new grounds of rejection.

Regarding Wang reference, the Applicant argues that the reference does not teach a detachable electrostatic chuck. Examiner respectfully disagrees. Wang's electrostatic chuck comprising the electrostatic puck 100 and base plate 175 is attached to chamber using screws 315 as shown in Figure 6, and therefore meets the limitation of a detachable electrostatic chuck. Figure 1 of Wang shows an annular flange of the base plate, the portion extending beyond 100.

Regarding Applicant's arguments toward Weldon and Wang references are rendered moot in view of new grounds of rejection.

Regarding Applicant's arguments toward Cole reference: Cole reference is relied upon solely for the teaching of a first and second heat fluid spiral channels, which is not taught by Weldon and Wang references, and the motivation: to provide efficient and uniform heat transfer to ensure highly accurate and uniform temperature setting and wafer testing (see Cole, Column 5, lines 50-55).

Regarding Applicant's arguments toward Flanigan reference: Flanigan reference is relied upon solely for the teaching of a spring assembly 234 (see Figure 2, Column 2, lines 52-62) to apply pressure to the heat transfer plate, which is not taught by Weldon and Wang, and the motivation for such a spring assembly, for better heat transfer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-

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6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. T./
Examiner, Art Unit 2836
February 27, 2009

/Stephen W Jackson/
Primary Examiner, Art Unit 2836